Venu Satuluri

15+ years of learning and applying ML at the frontier.
Strong on ML fundamentals and programming chops. Quick learner.

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Google Scholar

Work Experience

Oct 2024 | **Principal Engineer at Sierra AI**
Building AI voice agents for enterprise customer service

Mid 2023-Sep 2024 | **Co-Founder of Receptive AI**
Me and my co-founder created an AI voice agent that can answer phone calls 24/7 for small businesses (plumbers, insurance agents), and take actions such as book appointments, call transfers, and SMSes. Faced with strict latency constraints and the low bandwidth / noisiness of phone lines, we created a reliably working agent with >90% call success rate. Speech detection error rates of 3%, avg latencies of 1.4s, and human-like synth made our bot a pleasure to talk with. Check out our 5-star app reviews.

2012-'22 | **Principal Machine Learning Engineer at Twitter**
During my decade at Twitter, I played a key role in several ground-breaking products and improvements in the space of recommendations and machine learning.

- Co-creator of Twitter's first tweet recommendations product, called **MagicRecs**. This was Twitter's first sustained growth driver, and was responsible for double-digit user growth increases for several years. I was also Tech Lead Manager for this team from 2015-16.
- Creator of **SimClusters**, which enabled a quantum improvement in user and content modeling at Twitter. It was used all around the company, e.g. Home Timeline, MagicRecs, Explore, Health, and Ads. See our KDD 2020 paper for more.
- Mentored several tech leads and EMs, and group tech lead for multiple top company initiatives during last few years of my tenure there.

2006-'12 | **Ph.D. Candidate (defended in March 2012), The Ohio State University**
Did research in graph clustering (a.k.a. community discovery from networks) and similarity search algorithms. My research was published in the top venues of the field such as KDD, SIGMOD, and VLDB.

2005-'06 | **Software Engineer, D. E. Shaw India**

Selected Code

SBF — Sparse Binary Factorization, community discovery from billion-node graphs, used in SimClusters.
Analyses — A repo with notebooks doing various ML analyses e.g. comparing different Transformer implementations.

Selected Research Publications

KDD 2020 — Simclusters: Community-based representations for heterogeneous recommendations at Twitter
Venu Satuluri, Yao Wu, Xun Zheng et. al.

PVLDB 2014 — Real-time Twitter recommendation: online motif detection in large dynamic graphs
Pankaj Gupta, Venu Satuluri, Ajeet Grewal et. al

PVLDB 2012 — Bayesian locality sensitive hashing for fast similarity search
Venu Satuluri and Srinivasan Parthasarathy

SIGMOD 2011 — Local graph sparsification for scalable clustering
Venu Satuluri, Srinivasan Parthasarathy, and Yiye Ruan

KDD 2009 — Scalable graph clustering using stochastic flows: applications to community discovery
Venu Satuluri and Srinivasan Parthasarathy

Education

May 2012 — Ph.D. in Computer Science, **The Ohio State University**
Thesis: "Scalable Clustering for Modern Networks"

May 2005 — B.Tech. in Computer Science
National Institute of Technology Karnataka, India

Awards

2013 — ACM SIGKDD Dissertation Awards, *Honorable Mention*
2011 — Outstanding Graduate Research Award
Dept. of Computer Science and Engineering, The Ohio State University